

PATENT APPLN. NO. 09/890,646
RESPONSE UNDER 37 C.F.R. § 1.116

PATENT
FINAL

REMARKS

Claims 33, 36, 38, 44, and 46, withdrawn by the Office as being directed to a non-elected invention have been canceled.

Claim Objections

Claim 34 objected to as depending on a non-elected claim, claim 33, has been cancelled.

Drawings

Applicants do not understand the statement in the Action that Figure 6 is missing because applicants' copy of the application includes Figure 6. Additionally, the return receipt postcards filed with the application show that 11 sheets of drawings (Figs. 1-14) were filed with the application.

A copy of Figure 6 as filed with the application and a copy of the return receipt postcards are enclosed as part of this response.

Claim Rejections - 35 U.S.C. §112

Claims 25-28, 31-32, 35, 37, 40, 42-43 and 45 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

In the first rejection under §112, the Office asserts that new claims 25 - 28, 31, 32, 35, 37, 40, 42, 43 and 45 contain new matter. These claims, with the exception of claim 35, have been

PATENT APPLN. NO. 09/890,646
RESPONSE UNDER 37 C.F.R. § 1.116

PATENT
FINAL

cancelled. However, applicants note that the Office is not correct regarding claims 31 and 32. The specification on page 4 describes that the polynucleotides can have 50% (preferably 70%, 80% 90% or 95%) homology to SEQ ID NO:1, and that "the nucleotide sequence comprised in SEQ ID NO:1" means that sequence or a part thereof. Of course, nucleotides 144-1712 are a part of SEQ ID NO:1, and so the percent homology is applicable to that sequence as well. Also, the comment of the Office that the specification only supports an antisense DNA of "an isolated polynucleotide which has 70% or more sequence identity to the nucleotide sequence 144 - 1712 of SEQ ID NO:1" and a DNA that hybridizes to SEQ ID NO:1, is not understood. Throughout the application there are references to complementary sequences of the polynucleotide of the invention, e.g., at page 4, first paragraph.

Claims 25 - 32, 35, 37, 40, 42, 43 and 45 are rejected under §112, first paragraph, for lacking an adequate written description. These claims are also rejected under §112, first paragraph, for lack of enablement. In view of these rejections, new claims 47-54 have been added to the application.

New claims 47-54 are believed to comply with the written description and enablement requirements. The primary reason for

PATENT APPLN. NO. 09/890,646
RESPONSE UNDER 37 C.F.R. § 1.116

PATENT
FINAL

the rejections for lack of an adequate written description and for lack of enablement appears to be that percent homologies are recited in the claims, yet there are no functional requirements for the coded peptide set forth. It is believed that this situation is remedied by new claim 47, which is broad enough to allow for degeneracy of the code as well as allow for variants of the coded peptide as long as the it retains the same catalytic activity. Thus, claim 47 recites that any variant coded for has the ability to catalyze the synthesis of 2-hydroxyisoflavanone from flavanone. Two assays for such activity are given in the specification, and so one skilled in the art would be able to identify whether such variants are encoded.

The new claim language is believed to comply with the written description requirement as being analogous to Example 14 (Product by Function) of the Written Description Guidelines of the USPTO. While Example 14 is related to the claiming of a protein sequence, it is believed to be applicable to nucleotide sequences coding for a protein sequence.

A stepwise narrowing of claim 47 is recited in new claims 48 - 54. Concerning the complementary sequences, Example 15

PATENT APPLN. NO. 09/890,646
RESPONSE UNDER 37 C.F.R. § 1.116

**PATENT
FINAL**

(Antisense) of the Guidelines, along with the disclosure in the specification, allows for such claim language.

Claim Rejections - 35 U.S.C. §102

Claims 39 and 41 are rejected under 35 U.S.C. §102(b) as being anticipated by Otani K. et al. (Plant Physiology, 1994, vol. 105; pages 1427-1432) ("Otani"). It appears that this rejection was made because claims 39 and 41 were believed to "read on" the natural process in a naturally occurring cell. The suggested amendments to the claims also overcome this rejection.

Removal of the 35 U.S.C. § 112 and 35 U.S.C. § 102 rejections and an indication of the allowability of the claims are believed to be in order and are respectfully solicited.

The foregoing is believed to be a complete and proper response to the Office Action dated April 20, 2004, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of

PATENT APPLN. NO. 09/890,646
RESPONSE UNDER 37 C.F.R. § 1.116

PATENT
FINAL

time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,

KUBOVCIK & KUBOVCIK



Ronald J. Kubovcik
Reg. No. 25,401

Enclosures: Fig. 6
Copy of return receipt postcards

Atty. Case No. JKM-001
The Farragut Building
Suite 710
900 17th Street, N.W.
Washington, D.C. 20006
Tel: (202) 887-9023
Fax: (202) 887-9093
RJK/cfm

U.S. NAT'L STAGE OF PCT/JP00/00596

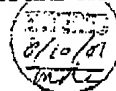
RCV/PP
8/5/01Patent ☒

Atty. Docket No. JKM-001

Date: August 2, 2001

Title of Invention: POLYNUCLEOTIDE ENCODING 2-HYDROXYISOFLAVANONE SYNTHASEApplicants: Shinichi AYABE, Toshio AOKI and Tomoyoshi AKASHI☒ Check: \$1,114.00 (No. 4100)☒ PCT Application Transmittal (35 U.S.C. 371)☐ Assignment☒ Fee Transmittal☐ Small Entity Declaration☐ Preliminary Amendment☐ IDS: PTO-1449 & * doc(s)☒ English Translation of Specification, Claims & Abstract (43 pages)☒ Formal Drawings (11 sheets, Figs. 1-14)☒ Other: WO 00/46356☒ Declaration & Power of AttorneyReceipt is hereby acknowledged of the papers filed as indicated in connection with
the above-identified case.

COMMISSIONER OF PATENTS AND TRADEMARKS



(Due: 08/04/01)

U.S. NAT'L STAGE OF PCT/JP00/00596

RCV/PP
8/10/01Patent ☒

Atty. Docket No. JKM-001

Date: August 2, 2001

Title of Invention: POLYNUCLEOTIDE ENCODING 2-HYDROXYISOFLAVANONE SYNTHASEApplicants: Shinichi AYABE, Toshio AOKI and Tomoyoshi AKASHI☒ Check: \$1,114.00 (No. 4100)☒ PCT Application Transmittal (35 U.S.C. 371)☐ Assignment☒ Fee Transmittal☐ Small Entity Declaration☐ Preliminary Amendment☐ IDS: PTO-1449 & * doc(s)☒ English Translation of Specification, Claims & Abstract (43 pages)☒ Formal Drawings (11 sheets, Figs. 1-14)☒ Other: WO 00/46356☒ Declaration & Power of AttorneyReceipt is hereby acknowledged of the papers filed as indicated in connection with
the above-identified case.

J620 Rec'd PCT/PTO 02 AUG 2001

COMMISSIONER OF PATENTS AND TRADEMARKS

09/890646

EARLY NOTIFICATION OF SERIAL NUMBER REQUESTED

INTERNET